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ABSTRACT

A six item open-ended questionnaire was developed and administered to teachers of 255 students in self-contained classes for the learning disabled in an effort to examine pupil progress and corresponding teaching methods. Comparison with previous teacher reports was used to describe pupils' academic progress in reading, mathematics, and spelling. Significant gains were noted in each area. Behavioral improvements in distractibility were observed for over one-half of the pupils. In response to a question about their most commonly used teaching style, teachers revealed a variety of approaches, with the most frequently cited involving some form of individualization. Examination of teaching approaches and their relationship to changes in reading, mathematics, and distractibility revealed a connection between reading improvement and emphasis on styles involving motor development and auditory/visual/kinesthetic approaches as well as such administrative and organizational strategies as grouping and instruction in small steps. Improvement in distractibility was linked to styles in which teachers reported emphasis on sensory and other specific skills as well as on individualization. (CL)

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# A FOLLOW-UP OF PUPILS WHO ENTERED LEARNING DISABILITIES SELF-CONTAINED CLASSES IN 1981-1982

A. Winter
E. N. Wright

#171

# RESEARCH SERVICE

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August 1983

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# INTRODUCTION

This study was initiated to respond to the recommendation made by the Learning Disabilities Work Group in their Final Report (Board, 1982):

> 22. The Workgroup recommends that the Research Department develop a five-year longitudinal study of the students enrolled in Special Programs (Learning Disability) and (Reading), in order to assess the relationship between assessment findings and educational program on the one hand; and between educational program and subsequent school success on the other; and that this research project include an observational component; and that additional outside funding be sought for this project; and that the implementation of a research project along these lines not be inhibited by a failure to secure outside funding.

Discussions among the members of the Work Group, rising from some of the literature they had consulted, regarding "the effectiveness of different approaches to the teaching of learning disabled or reading disabled pupils" (Board, 1982) gave impetus to this proposal. It was suggested that the learning disabled pupils to be studied would be those who were examined in the study, Characteristics of Pupils Entering Learning Disabilities Self-contained Classes, 1981-1982 (Winter, Cole and Wright, 1983).

An examination of some of the existing literature on classroom observation schedules was not promising. There did not seem to be any work on identifying instructional strategies that might be specifically relevant to learning disabilities.

Futhermore, observational studies are labor intensive and expensive. It would take an extended effort to develop a sound proposal to seek the substantial funding for such a study. Since some form of a longitudinal study was to be done, even if funds were not available, it was decided to undertake, as a first step, the project which follows below. This is, in brief, an attempt to look at the pupils' present progress using teachers' ratings, and also to collect information on teaching strategies, as described by the teachers. The data can then be used to provide a basis for developing a proposal for an observational study.

# PROCEDURES

## Identification of Variables

The form, "Questionnaire for the study of pupils who entered self-contained Learning Disabilities and Reading Classes 1981-1982" was designed to collect information about the academic progress of the pupils and information about the teaching styles used by the teachers of pupils in these classes. A copy of the questionnaire appears in Appendix A. The questionnaire is composed of six questions. The teacher in the special education class is asked to indicate the pupil's level of functioning in reading, mathematics and spelling. A regular grade teacher had prepared a report for the Individual Placement and Review Committee on these pupils prior to their placement in a self-contained class. The data which included a description of the pupil's academic functioning had been recorded and was available. Among the large number of behavioural variables collected in the previous descriptive study, distractibility emerged as the behavioural problem most frequently reported for these pupils before entering these classes. It was, therefore, also of interest to ask the special education teachers to categorize the pupils' ability to concentrate in order to see if there was progress in this area since entering these classes.

As already noted, the questions dealing with teaching styles and strategies were not only to identify the various methods used by these teachers in self-contained classes, but also it was hoped

that the data would be useful in developing observational instruments for the proposed longitudinal study.

## The Sample

The pupils to be considered in this study were those pupils who were described in the study done by Winter et al. (1983). These were all the pupils (255), who had entered Learning Disabilities Self-Contained classes in the 1981-1982 school year. Of these there were 214 who in the following year (1982-1983), were still in self-contained classes. Twenty puils had left the Board and are either attending a school in another board in Metropolitan Toronto or are living outside of Metropolitan Toronto. Another 19 pupils have been reintegrated into regular classes in the Toronto Board. Two pupils had been transferred to other Special Education programs, one a Behavioural Self-Contained class, the other Home Instruction.

Not all of the remaining pupils were attending the same school in 1982-1983 as they did the previous year. In the 1982-1983 school year, several Learning Disabilities Self-Contained classes opened in schools which did not have these classes before. This permitted some pupils to move to schools closer to their homes, which may account for some of the school changes. Also, a few of the teachers might have changed classes at the year's end.

As was requested by the Work Group, data were collected on pupils who entered self-contained reading classes in 1981-1982.

(This data were not collected for the preceding report.) Only 10 pupils were new to these classes in that school year. (There are only five such classes.) Therefore, it was decided not to include these data in the general analysis as it would be inappropriate to analyze such a small sample in order to draw conclusions.

## The Questionnaire

Questionnaires for each pupil, and an explanatory letter, were sent to teachers of the pupils who entered the self-contained classes in the 1982-1983 school year. (See Appendix B.) The teachers were asked to complete and return the questionnaires to the Research Department. Information was not collected on the pupils' progress in their first year in these classes (1981-1982) as not all the pupils entered the classes in September of 1981. Some would have joined these classes as late as the spring of 1982. The questionnaires were mailed in January 1983. It was felt that this would be an appropriate time, as any school changes would have taken place some months before, routines would have been established, and the teachers would know the pupils.

## Data Analysis

Before entering the data into the computer, all the responses to open-ended questions were categorized. Initially, it was hoped that the questions on teaching styles and strategies would not be open-ended. However, it was difficult to develop an appropriate

list of styles or methods and it was expected that the teachers' replies would provide a perspective on this topic which might later be used in developing categories for an observational study. Extensive categories were initially used for the teachers' answers, to reflect their varied comments on their instructional methods and strategies. Later, these were organized and condensed into more general categories.

As one of the objectives of the study was to assess the pupils' school success, the data collected on the variables dealing with academic achievement and behaviour were compared to the data collected about the pupils before entering these classes, (Winter, et al., 1983). Although these data are respectively from special education and regular teachers and were collected under different conditions for different purposes, no better measure of change was available. To test for significant relationships between teaching styles and academic and behavioural changes, the chi-square statistic was used (at the .05 level of significance). This statistic examines the pattern of proportions for the different categories and tests whether or not the pattern is the same for the different pupil outcomes. If the pattern varies more than you would expect by chance (less than 5 in a 100 times) a significant relationship is pressumed. For these analyses, the categories of teaching styles were collapsed into a few much broader groupings.

## Rate of Response

A few weeks after the letters and questionnaires were mailed to the schools in January, a second letter (see Appendix B) was sent to the teachers who had not yet responded. Finally, a few weeks after the second letter was sent, teachers who had still not responded were reminded by telephone. By the beginning of March, of the 214 questionnaires sent to the teachers, 186 (86.9%) were returned to the Research Department, reflecting a high level of cooperation.

## RESULTS

### Academic Functioning

To determine the academic progress of these pupils, the ratings in reading, mathematics and spelling given by the teachers on this questionnaire (Appendix A) and the ratings recorded from the previous study (Winter et al., 1983) were compared. The source of the academic ratings from the previous study was the School Report for the Identification, Placement and Review Committee (I.P.R.C.) which is completed by a referring teacher. (See Table 1.) Although these assessments were provided for different purposes under different conditions, other measures were not avaialble.

The ratings for the I.P.R.C. would have been done, in most cases, a year or two before. For example, a report for an I.P.R.C. might well have been prepared in January 1981 or Spring 1981 for a placement in September 1981. Also, some could have been completed in the late Fall of 1981 for a later placement in the 1981-1982 school year. The questionnaires for this study were completed in January 1983.

Some of the ratings done by teachers for the I.P.R.C. as well as for this study were not given to the nearest month, (e.g. "early grade 4", or "grade 5 plus"). These were rated in grades and months using the procedure followed in the previous study. (Details are recorded in the note to Table 1.)

TABLE 1

PUPILS' PROGRESS IN READING, MATHEMATICS
AND SPELLING BASED ON DIFFERENCE BETWEEN TWO TEACHERS' RATINGS
(in percent)

| Amount of Change In Academic Performance (in school years)* | Reading (N=165)** | Mathematics (N=161)** | Spelling (N=123)** |
|---|---|---|---|
| 3 or more lower | 2.4 | 3.7 | 3.3 |
| 2 - 2.9 lower | 8.5 | 3.7 | 11.4 |
| 1 - 1.9 lower | 6.1 | 11.8 | 9.8 |
| 0.1-0.9 lower | 9.1 | 11.2 | 10.6 |
| 0 (no change in grade level) | 6.1 | 5.0 | 8.1 |
| 0.1 - 0.7 higher | 9.7 | 8.7 | 6.5 |
| 0.8 - 1.9 higher | 17.0 | 18.0 | 23.6 |
| 2.0 - 2.9 higher | 17.0 | 14.3 | 11.4 |
| 3.0 - 3.9 higher | 11.5 | 11.8 | 5.7 |
| 4.0 or more higher | 12.7 | 11.8 | 9.8 |
| TOTAL | 100.1*** | 100.6*** | 100.2*** |
| Average Change | 1.3 | 1.2 | .7 |
| Standard Deviation | 2.2 | 2.3 | 2.2 |

*1 school year = 10 months
**Percentages based on "N" for which both scores were available.
***Does not equal 100.0% due to roundirg.

Note: When teachers provided general ratings the following coding procedures were used:-

1.2 = Pre-primer
1.5 = Primer
X.2 = Beginning of grade X /low grade X
X.5 = Middle of grade X /use also for grade X reported without months
X.8 = Late grade X /high grade X /grade X plus

Academic progress was calculated for the three subject areas. For this research project, academic progress is discussed using three arbitrary categories. Based on the frequencies in Table 1, it can be be seen that more than half the pupils had progressed eight months or more in reading (58.2%), mathematics (56.0%) and spelling (50.4%). Also, over one quarter were functioning at a lower grade level in reading (26.1%), mathematics (30.4%) and spelling (35.0%). The remainder of the pupils progressed from 0 to 7 months in reading (15.8%), mathematics (13.7%) and spelling (14.6%).

The results, (Table 1) indicate an average increase, for the entire group, of seven months in spelling (0.7), one year and two months (1.2) in mathematics and one year and three months (1.3) in reading. Since, as has been noted, (Winter et al., 1983) these students had been identified as having academic problems, and were falling behind in their work, these gains should, in general, be viewed positively.

One of the questions (question #3) on the questionnaire asks the teacher to rate the general progress of these pupils. The results indicated that over half the pupils (62.9%) were rated as having progressed normally or as was expected, and a tenth (11.3%) of the pupils were reported to have made rapid or exceptional progress. One-quarter (24.2%) of the pupils were perceived as having made little or no progress. (In 1.6% of the cases, information was not given.) Two teachers indicated that they had trouble answering this question and if used again, it should be

preceded by questions to establish the nature of the teachers' expectations.

## Distractibility

In the previous study, distractibility seemed to be a noteworthy characteristic of the pupils placed in Learning Disabilities Self-Contained classes. It was hypothesized in the report that this may be "one of the major characteristics of pupils which makes it difficult to program for them within regular classrooms, or to meet their learning needs through resource or withdrawal programs, and which eventually leads to their placement in self-contained programs". (Winter et al., 1983.) Therefore, it was of interest to collect information on distractibility for these pupils after they had been placed in a self-contained program. To determine change in this area, the information collected for this study was compared to the data in the previous study. The results indicate that of the 159 pupils for whom there was information from both this study and the previous study, over half (57.2%) were found to have improved in this area of behaviour. This group includes those pupils who were previously highly distractible and are now either reported as being occasionally distractible or not distractible, and those pupils who were previously occasionally distractible and now are reported as not distractible. Almost one-third of the pupils (32.1%) did not change in their behaviour which includes seven who had no

previous problem with distractibility. Seventeen (10.7%) of the pupils were reported as more distractible; the regular teacher had not identified them as distractible and they were now identified as occasionally or highly distractible or they had been described as occasionally distractible and now were identified as highly distractible.

## Teaching Styles and Strategies

Teachers were asked two questions about their teaching styles (see questionnaire, Appendix A). First, they were asked to characterize their styles of teaching for their class in general. They were given a space for four brief statements. They were then asked for each particular pupil "whether or not there was a special strategy or approach" which was used that was different from the general ones.

In order to preserve the flavour of the teachers' comments, the initial coding provided for a wide variety of different responses and these details are reported in Appendix C (Table A). The codes were grouped into more general categories which are reported below in Tables 2 and 3: these categories were further collapsed for the analyses in the following section. Table 2 indicates the frequency with which different teaching styles were mentioned. The reader must remember that these are the various teacher's own characterizations of they styles of teaching. The most frequently-mentioned strategy was that of individualizing the

TABLE 2

GENERAL TEACHING STYLES AND STRATEGIES

(N=186)

| Teaching Style | Number | Percent* |
|---|---|---|
| Ways of Teaching Reading | 38 | 20.4 |
| Ways of Teaching Language | 30 | 16.1 |
| Ways of Teaching Writing | 25 | 13.4 |
| Ways of Teaching Spelling | 10 | 5.4 |
| Ways of Teaching Mathematics | 12 | 6.5 |
| Use of Discussion for Teaching | 4 | 2.2 |
| Use of Groups for Teaching | 50 | 26.9 |
| Use of Specific Kinds of Questions or Patterns of Attack | 18 | 9.7 |
| Use of Homework/Seatwork | 1 | 0.5 |
| Item by Item | 18 | 9.7 |
| Clarity and Care in Directions | 13 | 7.0 |
| Emphasis on Skills | 7 | 3.8 |
| Repetition | 17 | 9.1 |
| Use of Individualized Programs or Special Help and Individualized Speed and Rate | 132 | 71.0 |
| Social Attention | 16 | 8.6 |
| Developing of Self-Concept | 15 | 8.1 |
| Contact with Home | 0 | 0 |
| Counselling | 4 | 2.2 |
| Time for Individual | 1 | 0.5 |
| Teaching for Independence and Responsibility | 25 | 13.4 |
| Isolation | 3 | 1.6 |
| Reinforcement and Behaviour Modification | 21 | 0.1 |
| Control/Firmness | 51 | 27.4 |
| Tight Organization of Time | 2 | 1.1 |
| Consistency/Fairness | 9 | 4.8 |
| Motor Development | 0 | 0 |
| Auditory/Visual/Kinesthetic Emphases | 59 | 31.7 |
| Specific Educational Strategies | 35 | 18.8 |
| Teaching to Strengths (Weaknesses) | 18 | 9.7 |
| Other Particular Emphases | 14 | 7.5 |
| Teacher Characteristics | 11 | 5.9 |
| Additional Comments | 38 | 20.4 |
| No Information (i.e. fewer than 4 comments) | 47 | 25.3 |
| TOTAL (4 times N) | 744 | |

*Percentages were calculated based on N=186.

TABLE 3

ADDITIONAL TEACHING STRATEGIES USED WITH SPECIFIC PUPILS
(N=186)

| Teaching Style | Number | Percent* |
|---|---|---|
| Ways of Teaching Reading | 6 | 3.2 |
| Ways of Teaching Language | 4 | 2.2 |
| Ways of Teaching Writing | 2 | 1.1 |
| Use of Groups for Teaching | 1 | 0.5 |
| Repetition | 3 | 1.6 |
| Use of Individualized Programs of Special Help and Individualized Speed and Rate | 2 | 1.1 |
| Social Attention | 4 | 2.2 |
| Developing Self-concept | 3 | 1.6 |
| Contact with Home | 2 | 1.1 |
| Counselling | 1 | 0.5 |
| Time for Individual | 1 | 0.5 |
| Teaching for Independence and Responsibility | 5 | 2.7 |
| Isolation | 3 | 1.6 |
| Reinforcement and Behaviour Modification | 10 | 5.4 |
| Control/Firmness | 1 | 0.5 |
| Tight Organization of Time | 1 | 0.5 |
| Motor Development | 3 | 1.6 |
| Auditory/Visual/Kinesthetic Emphasis | 4 | 2.2 |
| Specific Educational Strategies | 1 | 0.5 |
| Teaching to Strength (or Weaknesses)/ Challenging | 4 | 2.2 |
| Additional Comments | 4 | 2.2 |
| No Information (see Note) | 121 | 65.1** |
| TOTAL | 186 | 100.1** |

*Percentages were calculated based on N=186.

Note: Many teachers did not add specific strategies to the ones they had listed in the general section.

**Does not equal 100.0% due to rounding.

program to provide special help and/or individualizing the speed or rate at which the student worked and did assignments (71.0%). Besides a variety of specifics related to particular subject areas, the other most common strategies mentioned had to do with some form of auditory/visual/kinesthetic emphases (31.7%), the use of some form of control, firmness and structure (27.4%) and the use of groups for teaching (26.9%).

Table 2 was based on the up-to-four items which the teachers listed as representing their general teaching styles. The following question which asked for a specific strategy for an individual pupil was completed by about a third of the teachers (34.9%). There were some teachers who had already answered the question on "general" teaching styles differently for the different pupils they rated. With only a third responding, these data were not complete enough to use for the next set of analyses. Table 3 lists these additional specific strategies. Styles which used reinforcement, or some form of behaviour management were mentioned ten times in this section, other additional specific teaching strategies even less often.

In the previous study (Winter, et al., 1983), information was collected on the methods and modifications which the regular classroom teacher had already attempted and which were described in the report which was prepared for the Individual Placement and Review Committee. Here too, teachers most frequently reported some form of individualized help in the classroom as one of the modifications which he or she had made. Caution must be exercised

in making comparisons since in the first study teachers were reporting modifications that had been made for a student whom the teachers were now anticipating would have a special placement whereas, here the Special Education teachers were responding to a question about teaching styles and strategies they generally used.

## Academic and Behavioural Changes in Relation to Teaching Styles

To determine whether there was a relationship between the teaching styles reported by the teachers and the pupils' academic progress in reading and mathematics, a chi-square comparison was used. The teaching style categories of Table 2 were collapsed into even broader categories for the purpose of analysis. (See Tables 4, 5 and 6.) Table 7 outlines the teaching styles that these broad categories represent. For this analysis, spelling was not included as there was a considerable amount of missing information on this variable since teachers often did not give grade levels for spelling on the School Report for the I.P.R.C.

For the analysis of academic changes, three groups of pupils were examined: pupils who progressed academically (i.e. gained 8 months or more) based on teacher reports, pupils who were reported functioning at a lower level than before and those pupils who made little or no progress (0-7 months). The results indicated no significant difference in teaching styles among these groups in mathematics (Table 4). However, there was a difference

TABLE 4

PROGRESS IN MATHEMATICS AS IT RELATES TO TEACHING STYLES
(in percent)

| Teaching Strategies and Styles** | Gain of 8 mos.+ (N=360) | Gain of 0-7 mos. (N=88) | Loss (N=196) |
|---|---|---|---|
| Subject-related | 15.8 | 10.2 | 18.4 |
| Oganizational and administrative | 17.8 | 18.2 | 19.9 |
| Student-related, social | 5.6 | 14.8 | 7.7 |
| Use of individualized programs | 17.8 | 14.8 | 17.9 |
| Structure | 10.3 | 12.5 | 11.7 |
| Sensory and specific skills | 19.2 | 14.8 | 13.8 |
| Teacher's personal characteristics | 0.6 | 3.4 | 2.6 |
| Miscellaneous additional comments | 5.6 | 5.7 | 2.6 |
| No information | 7.5 | 5.7 | 5.6 |
| TOTAL | 100.2* | 100.1* | 100.2* |

*Does not equal 100.0% due to rounding.

**See Table 7 for the teaching styles that the categories in this table represent.

TABLE 5

PROGRESS IN READING AS IT RELATES TO TEACHING STYLES
(in percent)

| Teaching Strategies and Styles** | Gain of 8 mos.+ (N=384) | Gain of 0-7 mos. (N=172) | Loss (N=104) |
|---|---|---|---|
| Subject-related | 14.6 | 16.3 | 16.3 |
| Organizational and Administrative | 19.8 | 17.4 | 13.5 |
| Student-related, social | 7.8 | 5.8 | 13.5 |
| Use of Individualized Programs | 17.2 | 16.3 | 22.1 |
| Structure | 9.9 | 13.4 | 12.5 |
| Sensory and specific skills | 19.3 | 13.4 | 11.5 |
| Teachers personal characteristics | 0.3 | 4.1 | 1.9 |
| Miscellaneous additional Comments | 3.9 | 7.0 | 4.8 |
| No information | 7.3 | 7.0 | 4.8 |
| TOTAL | 100.1* | 100.1* | 99.9* |

*Does not equal 100.0% due to rounding.

**See Table 7 for the various teaching styles that the categories in this table represent.

TABLE 6

CHANGE IN DISTRACTIBILITY AS IT RELATES
TEACHING STYLES
(in percent)

| Teaching Strategies and Styles** | Improved (N=364) | No Change (N-204) | More Distractible (N=68) |
|---|---|---|---|
| Subject-related | 16.8 | 14.2 | 13.2 |
| Organizational and administrative | 17.3 | 18.6 | 13.2 |
| Student-related, social | 6.6 | 10.8 | 11.8 |
| Use of individualized programs | 19.2 | 13.7 | 13.2 |
| Structure | 9.3 | 8.3 | 20.6 |
| Sensory and specific skills | 19.0 | 19.1 | 13.2 |
| Teacher's personal characterisitics | 1.1 | 2.9 | 1.5 |
| Miscellaneous additional comments | 4.4 | 4.9 | 11.8 |
| No information | 6.3 | 7.4 | 1.5 |
| TOTAL | 100.0* | 99.9* | 100.0* |

*Does not equal 100.0% due to rounding.

**See Table 7 for the teaching styles that the categories in this table represent.

found in the data for reading, see Table 5, (chi-square = 28.20 with 16 degrees of freedom, significant at 0.5). It seems that there a relationship between what the teachers say they do in the classroom and the gain pupils have made in reading.

As can be seen, the differences for any specific teaching style characteristics are not great when looking at the relationship between that teaching style and the pupils' reading achievement. In Table 5, those pupils who progressed in reading compared to those who did not, were more likely to be in classes where teachers reported emphasizing sensory and specific skills (19.3% vs. 11.5%), using administrative and organizational strategies (19.8% vs. 13.5%) and less likely to have experienced "student-related, social" strategies (7.8% vs. 13.5%). As Table 7 indicates, "Sensory and Specific Skills" includes motor development, auditory/visual/kinesthetic emphases, etc. "Organizational and Administrative" ways of teaching include the use of discussion and/or groups for teaching, repetition, clarity in directions, etc. and "Social or Student-Related Teaching Styles" include social attention, developing self-concept, etc. (Table 8, Appendix C, gives more details.)

TABLE 7

CATEGORIES FOR TEACHING STYLES AND STRATEGIES

| Teaching Styles and Strategies | Categories |
|---|---|
| Subject-related | -ways of teaching reading<br>-ways of teaching language<br>-ways of teaching writing<br>-ways of teaching spelling<br>-ways of teaching mathematics |
| Organizational and Administrative | -use of discussion for teaching<br>-use of groups for teaching<br>-use of specific kinds of questions/patterns of attack<br>-use of homework/seatwork<br>-item by item<br>-clarity and care in directions<br>-emphasis on skills<br>-repetition |
| Student-related, social | -social attention<br>-developing self-concept<br>-contact with home<br>-counselling<br>-time for individual<br>-teaching for independence and responsibility |
| Use of Individualized Programs of Special Help and Individualized Speed and Rate | |
| Structure | -isolation<br>-reinforcement and behaviour modification<br>-control/firmness<br>-tight organization of time<br>-consistency/fairness |
| Sensory and Specific Skills | -motor development<br>-auditory/visual/kinesthetic emphases<br>-specific educational strategies<br>-teaching to strength (or weaknesses), challenging<br>-other particular emphases |
| Teacher's Personal Characteristics | |
| Miscellaneous Additional Comments | |

The data collected on distractibi ity was also analyzed for differences in teaching styles. (See Table 6.) Comparisons were made among three groups of pupils: those who improved in behavior, and those whose behaviour did not change (i.e. they remained in the same category, be it highly distractible, occasionally distractible or not distractible), and those who were more distractible. The results indicate that there is a significant relationship (chi-square = 28.96 with 16 degrees of freedom). Again the teaching strategies reported by the teachers are related to a change in the level of distractibility among these pupils.

As was the case with the reading results, no one teaching style could be identified as the major contributor to the relationship between changes in distractibility and teaching styles. However, the proportions in Table 5 indicate that of the three groups of pupils, the pupils who improved in behaviour, in comparison to those who were more distractible were less likely to be in classes where structure (9.3% vs. 20.6%) was emphasized or had teachers who made what were classed as "miscellaneous additional comments" (4.4% vs. 11.8%). (This later category included teachers' comments that could not be readily classified as teaching strategies.) These pupils who improved were also more likely to be in classes where sensory and other specific skills were emphasized, (19.0% vs. 13.2%) as well as individualization (19.2% vs. 13.29%).

Great caution must be exercised in interpreting these percentages. Each category used for these analyses combines

several categories (see Table 7) which in turn reflect various specific comments (see Table A). The assumption that it is appropriate to group the strategies that teachers reported using in this manner is supported, indirectly, by the statistically significant findings.

## SUMMARY AND DISCUSSION

A five-year longitudinal study of pupils in Learning Disabilities Self-Contained classes was recommended by the Learning Disabilities Work Group. External funding was to be sought for such a study which was to include an observational component. The trustees requested that a follow-up study proceed even if funding were not available. Because observational studies are expensive and there was limited background to support a proposal for funding, a modest follow-up study was designed which could also provide a basis for developing a proposal for external funding.

The Work Group was interested in a study of the progress of pupils in Learning Disabilities Self-Contained classes academically and behaviourally and in the instructional methods used by the teachers. The pupils involved in the study were those who entered Learning Disabilities Self-Contained classes in 1981-1982; these were the pupils who were described in the study, Characteristics of Pupils Entering Learning Disabilities Self-Contained Classes , 1981-1982 (Winter et al., 1983). This study is a follow-up of these pupils using in part the data from that study in comparison with the pupils' present status.

Ratings were supplied by the teachers on a questionnaire so these ratings could be compared to the ratings given to the

I.P.R.C. by the referring teacher a year or two before. The results indicated that many of the pupils had progressed academically and behaviourally. In the previous study, the most commonly reported learning problems for these pupils was underachievement with reading and mathematics being the most commonly noted specific academic areas. The present results show that over half of the pupils had improved in reading, mathematics and spelling by a year or more since the previous rating and over half the the pupils were reported as less distractible. Distractibility had emerged as the most frequently-mentioned behavioural problem among those pupils in the previous study (Winter et al., 1983).

Teachers of the Learning Disabilities Self-Contained classes were asked to identify their most commonly-used teaching styles. A wide variety of different kinds of answers were given. The most common was that the teacher had utilized some form of individualization in program and/or pacing.

The various teaching styles were examined in relationship to changes in reading, mathematics and distractibility. Significant relationships were found between the reported styles and changes in reading and changes in degree of distractibility. The results for reading indicate that pupils who progressed in reading are more likely to be in classes where the teacher says that there is an emphasis on teaching styles that include motor development auditory/vidual/kinesthetic approaches, etc., as well as well as administrative and organizational strategies (e.g. grouping,

teaching in short steps) and less likely to be in classes where teaching styles are reported to emphasize social attention, development of self-concept, etc.

For changes in level of distractibility, another set of relationships to the reported teaching styles were found. The pupils who improved in behaviour as opposed to those who became more distractible were less likely to be in classes where structure and miscellaneous approaches (i.e. the teachers' comments did not deal directly with style) were reported and slightly more likely to be in classes where teachers reported an emphasis on sensory and other specific skills as well as individualization.

Very great care must be taken in looking at the data on teaching styles. It is based on open-ended questions which asked teachers to identify their general teaching strategies for these pupils. Teachers who actually teach similarly may well have chosen to emphasize different aspects of their activities in their report. Teachers may have reported what they thought they should be doing or what they were doing sometimes (but not consistently) or what they thought they were doing (but really weren't doing) or what they were indeed doing much of the time. For these reasons and also because various different activities were clustered together for the analyses, the data on teaching styles remains at best suggestive. It does, however, provide a rationale for developing an observation schedule which will attempt to look at some of these elements in a further study of the growth and

development of pupils with Learning Disabilities severe enough to result in placement in a self-contained class.

## REFERENCES

The Board of Education for the City of Toronto. The report of the work group on learning disabilities. Toronto: Author, 1982.

Winter, A., Cole, E. & Wright, E. N. Characteristics of pupils entering learning disabilities self-contained classes 1981-1982. Toronto: The Board of Education for the City of Toronto, Research Department, 1983 (#169).

# APPENDIX A

## Questionnaire for Study of Pupils who Entered Self-Contained Learning Disabilities and Reading Classes in 1981-1982

QUESTIONNAIRE FOR STUDY OF PUPILS WHO ENTERED SELF-CONTAINED LEARNING DISABILITIES AND READING CLASSES IN 1981-1982

January 1983

Pupil_____

Teacher_____

School_____

Office Use Only

Project Number / / / /

I.D. Number / / / / / / /

1. Did you teach this pupil last year (1981-1982) / /

   Yes___ No___

2. Indicate the grade level at which this pupil is currently functioning in
   - reading ___.___ / / /
   - mathematics ___.___ / / /
   - spelling ___.___ / / /

3. How would you describe this pupil's academic progress this year? (Circle appropriate number.) / /

   | | |
   |---|---|
   | little or none | 1 |
   | normal or as expected | 2 |
   | rapid or exceptional | 3 |

4. How would you categorize this pupil's ability to concentrate? (Circle appropriate number.) / /

   | | |
   |---|---|
   | highly distractible | 1 |
   | occasionally distractible | 2 |
   | not distractible | 3 |

5. Please characterize your style of teaching for this class, in general, using no more than 4 brief statements.

   1. _____ / / /
   2. _____ / / /
   3. _____ / / /
   4. _____ / / /

6. For this pupil, is there a special strategy or approach which you use that is different from the above? / /

   Yes___ No___

   If yes, please briefly indicate the strategy.

   _____ / / /

APPENDIX B

Letters to Teachers

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO
155 College Street, Toronto M5T 1P6, Canada, 598-4931

RESEARCH DEPARTMENT

January 18, 1983

Dear Teacher:

The Research Department is studying the progress of pupils who entered self-contained learning disabilities classes and reading classes for the first time in 1981-1982. Hopefully this will be followed by an observational study of instructional strategies used with these pupils. At this stage, we are asking for your input in indicating the strategies you use and a statement of the pupils' progress as of the end of January 1983. Your answers will be treated confidentially. The summarized data will be published in a research report.

One form is provided for each pupil in the study. Please complete it promptly and return to the Research Department.

If a pupil is no longer in your classroom, we would appreciate a note on the form as to the pupil's present location PLUS a completed form based on your previous work with this pupil.

Thank you for your time and help. If you have a question, please contact Ann Winter (Ext. 393) or Dr. E. N. Wright (Ext. 432).

E. N. Wright,
Chief Educational Research Officer.

A. Winter,
Research Assistant.

AW:vv
Encl.

Edward N. McKeown, Director of Education/Ronald W. Halford, Associate Director of Education - Operations
Donald C. Rutledge, Associate Director of Education - Program/Charles W. Taylor, Superintendent of Curriculum and Program
Helen I. Sissons, Superintendent of Personnel/Michael J. Rose, Comptroller of Buildings and Plant/David S. Paton, Comptroller of Finance

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO
155 College Street, Toronto M5T 1P6, Canada, 598-4931

February 8, 1983

Dear Teacher:

A few weeks ago we asked for the completion of a one-page questionnaire on some of the pupils in your classroom. We are trying to collect this data as of January 31, 1983. We would appreciate it if you could complete the forms and send them by inter-office mail to the Research Department within a week. If for some reason the forms were destroyed or mislaid, please telephone Ms. Ann Winter immediately (598-4931, Ext. 393) and she will send replacement forms.

Yours sincerely,

E. N. Wright,
Chief Educational Research Officer.

ENW:vv

Edward N. McKeown, Director of Education/Ronald W. Halford, Associate Director of Education - Operations
Donald C. Rutledge, Associate Director of Education - Program/Charles W. Taylor, Superintendent of Curriculum and Program
Helen I. Sissons, Superintendent of Personnel/Michael J. Rose, Comptroller of Buildings and Plant/David S. Paton, Comptroller of Finance

## APPENDIX C

TABLE A - Categories for Teaching Styles/Strategies (N=186)

TABLE A

CATEGORIES FOR TEACHING STYLES/STRATEGIES
(N=186)

| | Number | Per cent* |
|---|---|---|
| **Ways of Teaching Reading** | | |
| - reading program individualized | 9 | 4.8 |
| - reading done through creative writing | 6 | 3.2 |
| - structured readers phonics, phonic and word content approach | 7 | 3.8 |
| - reading everyday, immersion in print, repeated reading | 5 | 2.7 |
| - oral reading, encourage to read more fluency | 1 | 0.5 |
| - silent reading | | |
| - response reading | 2 | 1.1 |
| - no phonics | | |
| - build on sight vocabulary | 1 | 0.5 |
| - independent reading with conferences | 4 | 2.2 |
| - listening to higher level taped materials and reading along | | |
| - novel approach | | |
| - rephrasing and language expansion of reading materials | 3 | 1.6 |
| **Ways of Teaching Language (oral/language Experience)** | | |
| - language-based programs, language experience, language development stories, tapes, strengthening basic language, emphasis on language and comprehension | 21 | 11.3 |
| - oral language | 1 | 0.5 |
| - language reductions | 1 | 0.5 |
| - less emphasis on oral presentations | 3 | 1.6 |
| - verbal rehearsal | | |
| - oral instructions | 1 | 0.5 |
| - word games, charts, pictures, poems | 3 | 1.6 |

| | | |
|---|---|---|
| **Ways of Teaching Writing** | | |
| - Giaccobi writing | 5 | 2.7 |
| - equalize written and oral output | 4 | 2.2 |
| - encouragement to write, written language | 1 | 0.5 |
| - colour coding | 2 | 1.1 |
| - daily journal writing | 4 | 2.2 |
| - use typewriter to write stories/ word-processor | | |
| - have him write a book on a specific topic | | |
| - using expressive language for better writing skills | 1 | 0.5 |
| - working at own level for writing | 3 | 1.6 |
| - Donald Graves writing program | 5 | 2.7 |
| **Ways of Teaching Spelling** | | |
| - focus on visual-discrimination in spelling | | |
| - phonetic approach in spelling | | |
| - spelling aroung sight words | 1 | 0.5 |
| - spelling and structured grammar | 1 | 0.5 |
| - use of concrete materials (manipulative) | 1 | 0.5 |
| - individualized spelling program | 4 | 2.2 |
| - spelling morphographs | 2 | 1.1 |
| **Ways of Teaching Math** | | |
| - problem-solving mathematics orientation | 4 | 2.2 |
| - teach math to the group with individual help in weak areas | 8 | 4.3 |
| **Use of Discussion for Teaching** | | |
| - use of discussion programs | 2 | 1.1 |
| - group discussion | | |
| - small group discussion | 2 | 1.1 |

| | | |
|---|---|---|
| **Use of Groups for Teaching (generally or for specific subjects)** | | |
| - group activities (games, puzzles) | 8 | 4.3 |
| - group instruction (group-oriented) | 18 | 9.7 |
| - group with one another for math | 5 | 2.7 |
| - grouped by topic for environmental studies | 10 | 5.4 |
| - small group instruction | 7 | 3.8 |
| - gradual introduction to large groups | 1 | 0 |
| - group discovery | 1 | 0.5 |
| **Use of Specific Kinds of Questions or Patterns of Attack** | | |
| - large amount of context and inference questions | 1 | 0.5 |
| - teach problem-solving patterns of attack | 4 | 2.2 |
| - memory strategies, memory training, mnemonic devices | 7 | 3.8 |
| - association, classification, whole to parts | 5 | 2.7 |
| - use of problem questions | 1 | 0.5 |
| **Use of Homework/Seatwork** | | |
| - homework | | |
| - minimum amount of seatwork | 1 | 0.5 |
| **Item by Item** | | |
| - small doses, bit by bit, short steps, task analysis, one step - one instruction at a time, work presented in small segments | 17 | 9.1 |
| - break down concepts very simply | 1 | 0.5 |
| **Clarity and Care in Directions, etc.** | | |
| - directions given carefully | | |
| - clearly explained instructions (work clearly laid out, clear, concise instruction) | 7 | 3.8 |
| - clearly defined expectations (work clearly laid out | 6 | 3.2 |

| | | |
|---|---|---|
| **Emphases on Skills** | | |
| - emphasis on skills, skills development, skill-oriented, skills activities (copy skills organization skills, study skills, social skills) | 7 | 3.8 |
| **Repetition** | | |
| - repetition (much review, recapitulation and evaluation, drilling daily, reteaching | 17 | 9.1 |
| - repetition - due to hearing/language problem | | |
| - repetition - of instructions with eye contact | | |
| **Use of Individualized Programs of Special Help and Individualized Speed and Rate** | | |
| - peer group teaching | 4 | 2.2 |
| - one on one conferences | 2 | 1.1 |
| - individualized teaching for core subjects | 8 | 4.3 |
| - each student has an individual program, individualized | 67 | 36.0 |
| - student completes work in his own time, works at own rate | 5 | 2.7 |
| - individual timetable | 2 | 1.1 |
| - working at own level | | |
| - encouraged to move ahead as much as possible, assign work at advanced level | | |
| - encouraged to solve own problems | | |
| - one-to-one, individual instruction | 41 | 22.0 |
| - individual research, individually assigned tasks | 3 | 1.6 |
| **Social Attention (personal, e.g. emphasis on social and emotional growth)** | | |
| - physical touching, humour, playfulness | 5 | 2.7 |
| - individual support and encouragement | 8 | 4 |
| - warm, caring, quiet atmosphere, calm | 2 | 1 |
| - emphasis on social/emotional growth | 1 | 0.5 |

| | | |
|---|---|---|
| **Developing Self-concept** | | |
| - build self-confidence and self-motivation, activities chosen to build self-concept | 14 | 7.5 |
| - self-image is boosted by close relationship between academic and affective domains | 1 | 0.5 |
| **Contact with Home** | | |
| - close work with parents (constant contact with home | | |
| **Counselling** | | |
| - guidance for improving behavior and relating to others | 1 | 0.5 |
| - discussions providing students opportunity to discuss problems | 1 | 0.5 |
| - social discussion | 1 | 0.5 |
| - teacher modelling | 1 | 0.5 |
| **Time for Individual** | | |
| - short lessons - allowance for active individuals | | |
| - needs free time | | |
| - keep a low level after absences | 1 | 0.5 |
| **Teaching for Independence and Responsibility** | | |
| - challenge pupils (fast-paced, demanding, intensive) | 8 | 4.3 |
| - stress on student responsibility, student responsible for completing day's work | 5 | 2 |
| - goal setting, help them to set own goals | 5 | |
| - fostering independent work | 6 | 3.2 |
| - allow opportunities for decision-making and self-expression | | |
| - encouraged to solve own problems | | |
| - motivate to work the whole day | 1 | 0.5 |

| | | |
|---|---|---|
| **Isolation** | | |
| - isolation - with study carrel | 2 | 1.1 |
| - isolation - location in room | 1 | 0.5 |
| **Reinforcement and Behavior Modification** | | |
| - emphasis of positive reinforcement, reinforcement for appropriate behavior, constant, immediate reinforcement, reinforcement of skills on ongoing basis | 20 | |
| - points and contracts | 1 | 0.5 |
| - behavior modification, behavior management to encourage him to attend and listen | | |
| **Control/Firmness** | | |
| - tight-control (firm)/supervision (of work and/or behavior), firmness (e.g. close observation and monitoring work in early stages) | 6 | 3.2 |
| - behavior strategies (discipline) | 1 | 0.5 |
| - attention span needs constant supervision (i.e. controlled checks on all work), consistent attention | 2 | 1.1 |
| - daily feedback on all work (rapid feedback and correction), corrections | 7 | |
| - structured instruction (expectations and follow-up, specific routines) | 33 | 17.7 |
| - structured setting | 2 | 1.1 |
| **Tight Organization of Time** | | |
| - organization of time | 1 | 0.5 |
| - careful organization | 1 | 0.5 |
| **Consistency/Fairness** | | |
| - consistency (consistent approach to standards, behavior) | 3 | 1.6 |
| - fairness/reasonableness | 1 | 0.5 |
| - consistent routines | 5 | 2.7 |
| **Motor Development** | | |
| - work on fine motor development | | |
| - teaching of motor skills | | |

| | | |
|---|---|---|
| **Auditory/Visual/Kinesthetic Emphases** | | |
| - multi-sensory approach | 15 | 8.1 |
| - visual rehearsal | 1 | 0.5 |
| - auditory rehearsal | | |
| - fading, visual sequential memory tasks | 1 | |
| - auditory training (auditory-based program | 4 | 2.2 |
| - neurological impress | 1 | 0.5 |
| - link auditory input to visual images | 4 | 2 |
| - use manipulative materials | 4 | 2.2 |
| - visual reinforcement of concepts wherever possible | 3 | 1.6 |
| - visual aids and experience approach | 4 | 2 |
| - concrete aids/materials | 15 | 8.1 |
| - audio-visual for environmental studies | 5 | |
| - visual-auditory training | 2 | 1.1 |
| - tactile, kinesthetic approach | | |
| **Specific Educational Strategies** | | |
| - direct teaching | 25 | 13.4 |
| - precision teaching ("self-talk") | 4 | 2.2 |
| - confluent education-academic/social | 3 | 1 |
| - transactional education - parental involvement | 3 | 1.6 |
| - invitation education | | |
| **Teaching to Strengths (or weaknesses) Challenging** | | |
| - teach to interests, individual selection of content - student directed | 3 | 1.6 |
| - teach to strengths | 9 | 4.8 |
| - remediate areas of weakness, attention to area of deficiency, focus on skills needing consideration | 6 | 3.2 |
| **Other Particular Emphases** | | |
| - rapid change of pace, fast paced | 10 | 5.4 |
| - prescriptive teaching based on results of testing both formal and informal | 2 | 1 |
| - program modified according to results of teacher observation of daily work and testing results | 2 | 1.1 |
| **Teacher Characteristics (personality)** | | |
| - thoughtful (i.e. not impulsive or reactive) | 1 | 0.5 |
| - flexibility | 2 | 1.1 |
| - innovative | 8 | 4.3 |

| Additional Comments | | |
|---|---|---|
| - emphasis on academics as opposed to behavior | 5 | 2.7 |
| - integration urged | 21 | 11.3 |
| - ongoing projects (i.e. aquarium, cooking, quilting, plant growing, research projects | 7 | 3.8 |
| - use of a broad variety of approaches and materials | 5 | 2.7 |
| No Information (i.e. fewer than 4 comments) | 47 | 25.3 |
| TOTAL (4 times N) | 744 | |

*The percentages were calculated based on N=186

NOTE: There are a few categories that have no frequency reported. These were created for coding some of the special strategies reported in answer to question 6.